



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Shang, et al.

Serial No.: 09/741,529

Confirmation No.: 6382

Filed: December 19, 2000

For: On-Site Cleaning Gas  
Generation For Process  
Chamber Cleaning

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Group Art Unit: 1746

Examiner: Michael Kornakov

MAIL STOP RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

CERTIFICATE UNDER 37 CFR 1.10	
I hereby certify that this correspondence and the documents referred to as attached therein are being deposited on December 19, 2003 with the United States Postal Service in an envelope as "Express Mail Post Office to Addressee," mailing label No. EV335470745US addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
Date 12/19/03	Signature <i>Keith R. Zuber</i>

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

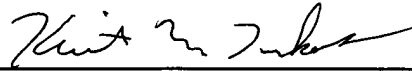
While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-1449.

If the sum of \$180.00 is due under 37 CFR § 1.17(p) pursuant to § 1.97, the Commissioner is hereby authorized to charge this fee, and any other fee necessary to make this submission timely, to the Deposit Account No. 20-0782/AMAT/5434.Y2/KMT.

Respectfully submitted,



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**U.S. Patent Documents**

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
	A1	2,879,212	03/24/1959	Hill, et al.	204	60	12/19/1955
	A2	3,146,179	08/25/1964	Davies	204	60	03/15/1962
	A3	3,684,667	08/15/1972	Sayce	204	60	07/27/1970
	A4	3,976,447	08/24/1976	Merchant, et al.	55	71	03/11/1975
	A5	4,125,443	11/14/1978	Grant, et al.	204	60	09/29/1977
	A6	4,176,018	11/27/1979	Faron	204	60	11/30/1978
	A7	4,312,718	01/26/1983	Watanabe, et al.	204	60	06/20/1980
	A8	4,498,953	02/1985	Cook, et al.	156	646	07/27/1983
	A9	4,818,326	04/04/1989	Liu, et al.	156	345	04/26/1998
	A10	4,900,395	02/13/1990	Syverson, et al.	156	639	04/07/1989
	A11	4,960,488	10/02/1990	Law, et al.	156	643	12/19/1989
	A12	5,002,632	03/26/1991	Loewenstein, et al.	156	643	11/22/1989
	A13	5,129,958	07/1992	Nagashima, et al.	134	22.1	05/23/1991

**Foreign Patent Documents**

*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
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X	B1	51091673	08/11/1976	JP (Eng Abst)			<input checked="" type="checkbox"/>	<input type="checkbox"/>
X	B2	04311570	11/04/1992	JP (Eng Abst)		✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**OTHER ART**

*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
	C1	International Sematech, "Motorola Evaluation of the Applied Science and Technology, Inc. (ASTeX) Astron Technology for Perfluorocompound (PFC) Emissions Reductions on the Applied Materials DxL Chemical Vapor Deposition (CVD) Chamber", April 16, 1999.
	C2	Astron, "Reactive Gas Generators," MKS Instruments, Inc.

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**U.S. Patent Documents**

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
	A14	5,180,466	01/1993	Shin	156	643	04/04/1991
	A15	5,207,836	05/04/1993	Chang	134	1	06/03/1992
	A16	5,207,836	05/04/1993	Chang, Mei	134	1	06/03/1992
	A17	5,298,112	03/29/1994	Hayasaka, et al.	156	643	12/15/1992
	A18	5,336,832	08/09/1994	Keller, Alfred	585	710	11/06/1992
	A19	5,366,585	11/1994	Robertson, et al.	156	643	01/28/1993
	A20	5,378,324	01/03/1995	Hodgson	204	60	04/02/1993
	A21	5,405,491	04/11/1995	Shahvandi, et al.	156	643	03/04/1994
	A22	5,406,008	04/1995	Sievert, Allen	570	123	12/28/1989
	A23	5,425,842	06/1995	Zijlstra	438	761	06/08/1993
	A24	5,449,411	09/1995	Fukuda, et al.	118	723E	11/19/1993
	A25	5,534,107	07/1996	Gray, et al.	156	643.1	08/18/1994
	A26	5,549,802	08/27/1996	Guo, Xin S.	204	298.11	10/24/1994

**Foreign Patent Documents**

*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
							YES	NO
	B3	08017804	01/1996	JP (Eng Abst)	H01L	✓ 21/3065	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B4	0697467	02/21/1996	EP	C23C	✓ 16/44	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B5	0819780	01/21/1998	EP		✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**OTHER ART**

*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
	C3	Flamm, et al., "Reaction of Fluorine Atoms with SiO <sub>2</sub> ," J. Appl. Phys., Oct. 1979 50 (10), 6211-13
	C4	Mucha, et al., "Chemiluminescent Reaction of SiF <sub>2</sub> with Fluorine and the Etching of Silicon by Atomic and Molecular Fluorine," J. Appl. Phys. 53(6) 4553-54

Examiner	Date Considered
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**U.S. Patent Documents**

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
	A27	5,565,038	10/15/1996	Ashley, Ethan	134	2	05/16/1991
	A28	5,597,495	01/28/1997	Keil, et al.	216	66	11/07/1994
	A29	5,620,526	04/1997	Watatani, et al.	134	1.1	07/22/1994
	A30	5,679,215	10/21/1997	Barnes, et al.	156	646.1	01/02/1996
	A31	5,685,916	11/11/1997	Ye, et al.	134	1.1	07/07/1995
	A32	5,688,384	11/18/1997	Hodgeson, et al.	204	229	09/14/1994
	A33	5,693,147	12/02/1997	Ward, et al.	134	1.1	11/03/1995
	A34	5,705,080	01/06/1998	Leung, et al.	216	67	07/06/1994
	A35	5,756,400	05/26/1998	Ye, et al.	438	710	12/08/1995
	A36	5,762,813	06/09/1998	Takiyama, et al.	216	67	03/13/1996
	A38	5,788,799	08/04/1998	Steger, et al.	156	345	06/11/1996
	A39	5,824,607	10/1998	Trow, et al.	118	723MA	02/06/1997

**Foreign Patent Documents**

*Examiner Initial	Document Number	Date	Country	Class	Subclass	Translation	
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	B6	99/06611	02/11/1999	WO		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B7	99/28538	06/19/1999	WO		<input type="checkbox"/>	<input checked="" type="checkbox"/>

**OTHER ART**

*Examiner Initial	Including Author, Title, Date, Pertinent Pages, Etc.
C5	MKS ASTeX Products Announces ASTRON Ser High Flow Reactive Gas Generators for Process Chamber Cleaning Applications, from <a href="http://www.astex.com/prastrone.html">www.astex.com/prastrone.html</a> .
C6	Donnelly, et al., "Studies of chemiluminescence accompanying fluorine atom etching of silicon: J. Appl. Phys., 51 (190) (Oct 1980) 5273-76.

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**U.S. Patent Documents**

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
	A40	5,844,195	12/01/1998	Fairbairn, et al.	219	121.43	11/18/1996
	A41	5,846,886	12/08/1998	Hattori, et al.	438	740	02/28/1997
	A42	5,849,639	12/15/1998	Molloy, et al.	438	714	11/26/1997
	A43	5,872,061	02/16/1999	Lee, et al.	438	705	10/27/1997
	A44	5,880,031	03/09/1999	Wong	438	706	06/25/1992
	A45	5,880,032	03/09/1999	Doi, et al.	438	706	07/30/1996
	A46	5,888,309	03/30/1999	Yu	134	1.2	12/29/1997
	A47	5,904,566	05/18/1999	Tao, et al.	438	689	06/09/1997
	A48	5,935,874	08/10/1999	Kennard	438	710	03/31/1998
	A49	5,958,801	09/1999	Langley	438	738	02/20/1996
	A50	5,970,376	10/19/1999	Chen	438	637	12/29/1997
	A51	5,980,769	11/09/1999	Yanagisawa, et al.	216	67	11/06/1997

**Foreign Patent Documents**

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							YES	NO
	B8	0965661	12/22/1999	EP	C25B	9/00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B9	0051938	09/08/2000	WO	C01B	7/24	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B10	00/52740	09/08/2000	WO	H01L	21/00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**OTHER ART**

*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
	C7	Flamm, et al., "The reaction of fluorine atoms with silicon," J. Appl. Phys. 52 (5) (May 1981) 3633-39.
	C8	Flamm, et al., "XeF <sub>2</sub> and F-atom reactions with Si; their significance for plasma etching," Solid State Technology (April 1993) 117-121.

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----------	-----------------

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
	A52	6,007,733	12/28/1999	Jang, et al.	216	80	05/29/1998
	A53	6,020,035	02/01/2000	Gupta, et al.	427	534	10/29/1996
	A54	6,024,887	02/15/2000	Kuo, et al.	216	48	06/03/1997
	A55	6,024,888	02/15/2000	Watanabe, et al.	216	73	11/13/1996
	A56	6,029,718	02/29/2000	Jackson, et al.	141	231	06/26/1998
	A57	6,051,505	04/18/2000	Chu, et al.	438	710	03/05/1998
	A58	6,109,206	08/29/2000	Mayden, et al.	118	723IR	05/29/1997
	A59	6,117,793	09/2000	Tang	438	740	09/03/1998
	A60	6,125,859	10/03/2000	Kao, et al.	134	1.1	07/11/1997
	A61	6,159,333	12/12/2000	Gupta, et al.	156	345	10/08/1998
	A62	6,255,222	07/24/2001	Herchen, et al.	216	60	06/16/2000
	A63	6,264,852	07/24/2001	Herchen, et al.	216	60	06/16/2000
	A64	6,271,148	08/07/2001	Kao, et al.	438	727	10/13/1999
	A65	6,286,451	09/2001	Ishikawa, et al.	118	723I	05/29/1997
	A66	6,352,081	03/05/2002	Lu, et al.	134	22.1	07/09/1999

**Foreign Patent Documents**

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X	B11	1076355	02/14/2001	EP	H01L	21/00	<input type="checkbox"/>	<input type="checkbox"/>

**OTHER ART**

*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
	C9	Ibbotson, D.E., et al., "Comparison of XeF2 and F-Atom Reactions with Si and SiO2," March 28, 1984.
	C10	Aliev, V.S., et al., "Development of Si (100) Surface Roughness at the Initial Stage of Etching in F2 and XeF2 Gases; Ellipsometric Study," Surface Science, 206-14 (1999).

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	A67	6,362,031	03/2002	Yamaguchi, et al.	438	158	11/24/1999
	A68	6,366,366	04/02/2002	Nakamura	358	487	08/20/1998
	A69	6,374,831	04/23/2002	Chandran, et al.	134	1.1	02/04/1999
	A70	6,379,575	04/30/2002	Yin, et al.	216	67	10/21/1997
	A71	6,387,288	05/14/2002	Bjorkman, et al.	216	67	04/21/2000
	A72	6,500,356	12/31/2002	Goto, et al.	216	72	03/27/2000
	A73	6,544,345	04/08/2003	Mayer, et al.	134	28	07/12/2000
	A74	6,602,433	08/05/2003	Bhardqaj, et al.	216	37	04/06/2000

**For ign Patent Documents**

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						YES	NO

**OTHER ART**

*Examiner Initial	Including Author, Title, Date, Pertinent Pages, Etc.
C11	Habuka, H, et al., "Dominant overall chemical reaction in a chlorine trifluoride-silicon-nitrogen system at atmospheric pressure," Jpn. J.Appl. Phys., (1999) 38 6466-69.
C12	Larson, P.R., et al., "Atomic Fluorine Bean Etching of Silicon and Related Materials," J. Vac. Sci. Tech. B (1999).
C13	Petition to Withdraw Application from Issuance and Reject the Application as Being Invalid, October 22, 2003
C14	References for Consideration by Examiner, November 7, 2003
C15	

Examiner

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	A75	2002/0074013	06/20/2002	Yadav, et al.	134	1.1	12/19/2000
	A76	2003/0010354	01/16/2003	Goto, et al.	134	1.1	04/27/2000
	A77	2003/0109144	06/12/2003	Goto, et al.	438	734	12/24/2002
	A78	2003/0121796	06/12/2003	Goto, et al.	438	734	12/24/2002

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	C17	

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